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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,638	12/05/2003	Tohru Kimura	8830.0002-01	9614
22852	7590	04/13/2004	EXAMINER	
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 1300 I STREET, NW WASHINGTON, DC 20005			BOUTSIKARIS, LEONIDAS	
			ART UNIT	PAPER NUMBER
			2872	
DATE MAILED: 04/13/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/727,638

Applicant(s)

KIMURA, TOHRU

Examiner

Leo Boutsikaris

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 36-51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 36,44,46 and 48 is/are rejected.
- 7) ☒ Claim(s) 37-43,45,47 and 49-51 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 10/191,478.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/5/03
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 10/191478, filed on 7/10/2002.

Claim Objections

Claims 41, 45, 51 are objected to because of the following informalities:

Claims 45, 51 cite "...in a direction to perpendicular..." in lines 7 and 10, which should be rephrased as "...in a direction perpendicular..." for better clarity.

In claim 41, line 17, "PR" should be changed to "P_R"

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 36 is rejected under 35 U.S.C. 102(b) as being anticipated by Tatsumi (JP 59-127006).

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Tatsumi discloses a single lens 3 (Fig. 7) for compensating aberrations, wherein the single lens has: (i) a first optical surface (right side of 3) having a diffractive structure in the form of a Fresnel zone plate having a plurality of ring-shaped zone steps formed on a plane surface; and (ii) a second optical surface (left side of 3) opposite to the first optical surface, the second optical surface having a concave refractive surface (see Constitution section of translated Abstract, and Figs. 7, 12-13).

Claims 36, 44, 46, 48 are rejected under 35 U.S.C. 102(b) as being anticipated by Londono (US 5,260,828).

Regarding claim 36, Londono discloses an aberration compensating optical element comprising a single lens 30 having: (i) a first optical surface (right side of 30) having a diffractive structure in the form of a Fresnel zone plate 33 having a plurality of ring-shaped zone steps formed on a plane surface; and (ii) a second optical surface (left side of 30) opposite to the first optical surface, the second optical surface having a concave refractive surface 32 (Fig. 4, lines 26-27, col. 6).

Regarding claim 44, the lens is made from plastic (lines 22-23, col. 3).

Regarding claims 46, 48, the single lens is designed so that the refractive power of the lens (negative, see Fig. 4) and the power of the diffractive element are such so that they change with changes in temperature so that the total power and focal length of the lens remain constant at a given wavelength, which is equivalent with the claimed relation $P_{T1} < P_{T0} < P_{T2}$ (lines 52-64, col. 16, and 6-24, col. 4).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tatsumi (JP 59-127006) in view of Londono (US 5,260,828).

Tatsumi discloses all the limitations of the above claim except for specifying that the single lens is made from plastic. Londono discloses a hybrid lens having a diffractive zone plate formed on one of the two surfaces of the lens, with the surface opposite to the latter being a concave refractive surface (Fig. 1), wherein the lens is made from plastic PMMA material (lines 20-30, col. 3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the lens of Tatsumi from plastic, as taught by Londono, since plastic is cheaper than glass, and it is easier to form a ring-shaped structure on a plastic using replication techniques.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

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provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 36 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 4 of copending Application No.

10/191,478. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 4 includes every single limitation of claim 36, i.e., claim 36 being a broader version of claim 4.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Allowable Subject Matter

Claims 37-43, 45, 47, 49-51 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and if claims 41, 45, 51 overcome the objection set forth in this Office Action.

Claims 37-43, 45, 47, 49-51 are allowable over the prior art of record for at least the reason that, even though the prior art discloses hybrid lenses for compensating for aberrations, the prior art fails to teach or reasonably suggest, regarding claim 37, an aberration compensating optical element wherein the claimed relationship for the paraxial power of the lens for wavelengths within 10 nm of a wavelength is satisfied, regarding claims 38, 50, an aberration compensating optical element, wherein the claimed relationship for the step of the ring-shaped

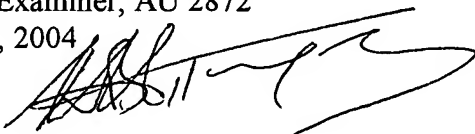
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zone step is satisfied, regarding claims 39-42, 49, an aberration compensating optical element wherein the claimed relationships for the paraxial powers of the diffractive and refractive lens are satisfied, regarding claim 43, an aberration compensating optical element wherein the diffraction efficiency of the diffractive structure becomes maximal at a wavelength not more than 550 nm, regarding claims 45, 51, an aberration compensating optical element, having the claimed relationship for the intervals between adjacent steps in the ring-shaped zones of the diffractive structure, regarding claim 47, an aberration compensating optical element having the claimed relationship for the rate of change of the paraxial power with the temperature change, as set forth by the claimed combination.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Leo Boutsikaris whose telephone number is 571-272-2308.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Leo Boutsikaris, Ph.D.
Patent Examiner, AU 2872
April 7, 2004

A handwritten signature in black ink, appearing to read 'LBOUTSIKARIS', with a stylized flourish extending from the end.